

# MX2180

## 80 Gb/s 2:1 Multiplexer

Type: Module	Technology: SiGe	$f_T/f_{max}$ : 225/300 GHz	Metallization: 4	Ref.-No.:R1020
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### Brief description:

The MX2180 is a High-Speed 2:1 Multiplexer for data rates above 80 Gb/s. Key features are:

- single-ended and differential IO operation
- broadband operation
- 360° at 80 Gb/s clock phase margin at data inputs
- sampling flip flops for data inputs to ensure optimal timing at mux core
- adjustable output swing
- adjustable duty cycle
- single supply voltage

At the data inputs the MX2180 consists of two symmetrical input buffers which allows single ended as well as differential drive. Furthermore the input buffers provide a high input sensitivity of 50  $mV_{pp}$ . The same holds for the clock input which runs at half of the frequency of the output data rate (so called half-rate clocking: e.g. 40 GHz clock for 80 Gb/s output data rate).

The data inputs use DLL-controlled delay elements combined with sampling flip flops to generate the input signals for the multiplexer core. These delay elements have a delay range of more than 1 UI for input signal of 40 Gb/s. Together with the sampling flip flops this allows for arbitrarily phase relations of the data and clock input signals while still driving the multiplexer core optimum alignment of data and clock signals.

The MX2180 exhibits a fully symmetrical differential 50  $\Omega$  CML data output buffer which provides either one differential output signal or two single ended output signals. For multi-purpose applications the single ended output CML voltage swing can be adjusted between 300 and 500  $mV_{pp}$ .

The MX2180 can be used together with two MX4140 to generate 80 Gb/s signals from existing 10 Gb/s measurement equipment.

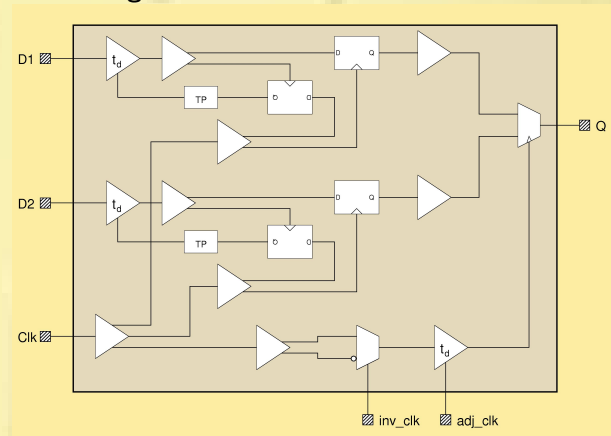
Main fields of application are:

- general high-speed pattern generation
- speed upgrade of measurement equipment (e.g. Agilent ParPert or Anritsu 1758/1763)
- low jitter test data generation

### Package:

The MX2180 is available as ruggedized K and/or V connector module.

### Block diagram of the MX2180:



### MX2180 electrical data:

Power supply, ( $V_{ee}$ )	-5 V
Current consumption	1 A
max. datarate	100 Gb/s
Input amplitude range	50 $mV_{pp}$ - 1 $V_{pp}$
Output amplitude range	100 $mV_{pp}$ - 1 $V_{pp}$

### MX2180 K Module:

